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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/690,993	10/17/2000	John Eric Kleider	GE04563	3158

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MOTOROLA, INC.  
CORPORATE LAW DEPARTMENT - #56-238  
3102 NORTH 56TH STREET  
PHOENIX, AZ 85018

EXAMINER

LIU, SHUWANG

ART UNIT PAPER NUMBER

2634

DATE MAILED: 08/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/690,993

Applicant(s)

KLEIDER ET AL.

Examiner

Shuwang Liu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 25 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5,6,9-11 and 30 is/are allowed.
- 6) ☒ Claim(s) 1-4,7,8,12,13 and 22 is/are rejected.
- 7) ☒ Claim(s) 14-21 and 23-29 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. In view of the Appeal Brief filed on May 25, 2004, PROSECUTION IS HEREBY REOPENED. New ground rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

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The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-4, 7, 8, 12 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Polley et al. (US 6,363,109).

As shown in figure 2 and 4-8, Polley et al. discloses an orthogonal frequency-division multiplex (OFDM) communication system utilizing a plurality of subchannels, comprising:

(1) regarding claims 1 and 12:

receiving a reference signal (pilot tones) transmitted over each subchannel in said plurality of subchannels within said wideband channel (column 5, lines 25-31 and column 9, lines 1-13, and it also inherent to have a reference signal transmitted over each subchannel according to the T.14 standard and see the cited reference US 5,901,180);

producing a modulation profile of said wideband channel, wherein said modulation profile is responsive to a signal-to-noise ratio (SNR) for each subchannel in said plurality of subchannels within said wideband channel (column 7, line 53-column 8, line 5); and

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transmitting OFDM data in response to said modulation profile (column 7, line 53-column 8, line 5 and claim 1).

(2) regarding claim 2:

establishing a least-SNR requirement (stored threshold, column 8, lines 42-60);

determining the SNR for each of the subchannels in the plurality of subchannels within the wideband channel (column 7, lines 53-55); and

designating each of the subchannels having an SNR greater than the least-SNR requirement as a clear subchannel (no significant clipping) (column 7, lines 53-55).

(3) regarding claim 3:

wherein said producing activity additionally comprises:

establishing a least-quality-of-service requirement (SNR threshold) (column 8, lines 49-51); and

optimizing a throughput of each of said clear subchannels in which a quality-of-service is greater than said least quality-of-service requirement (column 10, lines 14-44).

(4) regarding claim 4:

wherein said producing activity additionally comprises:

establishing a least-throughput requirement (column 8, lines 49-51 and column 12, lines 5-27); and

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optimizing a quality-of-service of each of said clear subchannels in which a throughput is greater than said least throughput requirement (column 12, lines 46-54 and column 10, lines 14-44).

(5) regarding claim 7:

additionally comprising iterating said producing and transmitting activities to track changes in said SNR in each subchannel of said plurality of subchannels within said wideband channel (column 2, line 65-column 3, line 8 and column 12, lines 1-38).

(6) regarding claim 8:

wherein said producing activity comprises:

scanning said wideband channel (step 152 in figure 4); and

determining said SNR for each of said subchannels in said plurality of subchannels within said wideband channel in response to said scanning activity (step 156 in figure 4).

(7) regarding claim 13:

wherein each of the user channels comprises at least one of said subchannels (column 7, lines 52-67).

4. Claim 22 is rejected under 35 U.S.C. 102(e) as being anticipated by Wu et al. (US 6,134,273).

As shown in figures 1-7, Wu et al. discloses an orthogonal frequency-division multiplex (OFDM) communication system utilizing a plurality of subchannels, comprising:

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an OFDM receiver configured to obtain a signal-to-noise ratio (SNR) for each subchannel in said plurality of subchannels within said wideband channel (column 2, line 48-67); and

an OFDM transmitter (see figure 3) in communication with said OFDM receiver and configured to transmit OFDM data so that said OFDM receiver receives said OFDM data in each subchannel within said plurality of subchannels within said wideband channel at one of zero subchannel signal level (for example,  $n=2$  QPSK in table 1), an intermediate subchannel signal level ( $n=4$  16QAM), and a maximum subchannel signal level in response to said SNR therein ( $n=8$  256 QAM) (column 3, lines 1- 27 and column 5, lines 2-9).

***Allowable Subject Matter***

5. Claims 5, 6, 9-11 and 30 are allowed.
6. Claims 14-21 and 23-29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to teach a method of orthogonal frequency-division multiplex (OFDM) communication via a plurality of subchannels within a noncontiguous wideband channel, said method comprising determining an impeded subchannel each of said subchannels in which said

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SNR is less than said first least SNR threshold and greater than or equal to a second least-SNR requirement.

***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shuwang Liu whose telephone number is (703) 308-9556.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin, can be reached at (703) 305-4714.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

**(703) 872-9306 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).



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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.



Shuwang Liu  
Primary Examiner  
Art Unit 2634

August 16, 2004